

Work Order ID 69707

Tuesday, May 17, 2011 2:22:56 PM



Page 1

Item ID: D350-636-011

Accept



Setup Start



Revision ID:

Stop



Item Name: Skidtube LH

Start Date: 5/17/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 6/2/2011 Req'd Qty: 1.00

Customer:

Reference:

Approvals:

Process Plan:

Date:

4-05-17

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start



Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D3492

C

D2750

Rev F.

IIN-D350-636

H

EC 11-07-26

100

0.00



DC

DOCUMENT CONTROL

Memo

0.00

Document Control

Photocopy blue file and type labels per PPP D350-636-011 CHG 006

11 07 22 (1)

B69707

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

110

0.00



Skidtubes

Skidtubes

Memo

0.00

1- Pick D2600-3 Bent

2- Deburr FWD and AFT ends, remove bending marks. Scribe batch# inside AFT end per dwg D2750

3- Drill pilot holes for blade fitting bolt holes using DT8983. Open to 0.500", deburr.

4- Locate DT8330 off of blade fitting bolt holes and drill pilot holes for blade fitting

5- Drill only two fwd step holes using DT9616. Ensure proper positioning.

6- Drill pilot holes as per Dwg D2750 sheet 4 (D2750-1 details). Drill using drill Jig DT8150 & DT8863A for first side only DT8863B for second side (detail B)

7- Clecko DT8863B on second side of tube and drill pilot holes for detail B.
SECOND SIDE

8-Open up holes for Detail B to 0.375" (4 holes per side) and blade fitting location holes to 0.500" (total of 4 holes per side) as per dwg D2750. Open up holes for ground handling and detail C to 0.500" (8 holes per side)

9-Drill pilot holes for wearplates as per Dwg D2750 using DT8108 open to 0.297".

10-Open up holes of Detail A to 0.297" (total of 2 holes per side)

B 11/06/21

W/O:		WORK ORDER CHANGES					
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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

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QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

11-Weld D2744 Cap as per Dwg D2750 and QSI 004. Fill grooves in bend left
from bending as per QSI 004A/R Aluminum Rod batch: ☐

12-Grind welds flush as per Dwg D2750

120



QC

Quality Control

QC10- Inspect visual per QSI004- ground welds

0.00

Memo

0.00

8 u/6/27

130



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

8 u/6/27

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140 HandFinish Hand Finishing	Chemical Conversion Coat per QSI005 4.1 Memo	0.00 0.00							
150 QC Quality Control	QC3- Inspect Part Finish Memo	0.00 0.00							

Handwritten signature and date:
11.06.27

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

160

0.00



Skidtubes

Skidtubes

Memo

0.00

1-Open up holes of Detail C and ground handling to 0.625" (total of 8 holes per side)
as per dwg D2750.2-Open up holes of Detail B to 0.750" (total of 4 holes per side)
as per dwg D2750.

3- Open float hole to 0.500" (4 per side)

4-Chamfer holes of Detail B, C, ground handling and float holes per dwg D2750
(welding instructions on sheet 8)

5-Deburr and blow out all chips from inside of tube

6- Prepare tube for welding, remove alodine as required.

7-Bond web D2739 in place as per QSI 015

A/R ☐☐☐ Sikaflex-291 batch: 116945 ☐☐☐
exp. date: 12/01/158- Weld spacers D3490-1, D3490-3 and D2743 as per dwg D2750 & QSI004
(welding instructions on sheet 8)A/R ☐☐☐ Aluminum Rod batch: M117456

9- At section AJ-AJ drill out x-bolt spacer to 0.404"

10-Grind welds flush as per Dwg D2750

BB 11/06/28

BE 11/06/30
BB 11/07/05

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Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp11-Spot face ground handling holes section (total of 4 places per side) as per
dwg D2750

12-Deburr holes

170



QC

Quality Control

QC10- Inspect visual per QSI004- ground welds

0.00

Memo

0.00

8 ulo 7/06

180



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

8 ulo 7/06



B 11/07/05

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Cust Item ID:

Required Date: 6/2/2011 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

190

Pressure Wash per QSI005 4.3

0.00



HandFinish

Memo

0.00

Hand Finishing

Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch.

1 ϕ BL 11-7-12

200

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00



Powdercoat

Memo

0.00

Powder Coating

START TIME:

OVEN TEMPERATURE:

FINISH TIME:

8:30
320°F
9:001X ϕ M-11/07/13

210

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

Inspect for foreign object per QSI 024

1 ϕ M 11/07/20

W/O:		WORK ORDER CHANGES					
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Customer:

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

220

0.00



HandFinishing

HandFinish

Memo

0.00

Hand Finishing

1- Install inserts as per Dwg D2750

1 0 M 11/07/11

230

0.00



HandFinishing

HandFinish

Memo

0.00

Hand Finishing

1-Inspect for Foreign Objects

2-Spray inside of tube with "LPS-3" batch: N/A

3-Install blade fitting D3488-041, wearshoes and ground handling hardware as per dwg D2750

SIKA FLEX 241

BATCH: 1117516

EXP DATE: 11/16

4-assemble o'ring to plug as per dwg D3492 and apply o'ring lube

A/R 55-o'ring lube batch: 11114189

5-Coat all exposed fasteners with "LPS Procyon" batch: 11114596

1 0 M 11/07/11

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Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
240	QC5- Inspect part completeness to step on W/O	0.00							
QC	Memo	0.00							
Quality Control									
250	Pick Kit	0.00							
Packaging	Memo	0.00							
Packaging									
260	QC4- 100% Inspect kits for completeness	0.00							
QC	Memo	0.00							
Quality Control	*****ensure antiseize is on AN8C21A bolts*****								

W/O:		WORK ORDER CHANGES					
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Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
270		0.00							
	Packaging								
Packaging	Memo	0.00							
Packaging	Package as per PPP D350-636-011								
280		0.00							
	QC21- Final Inspection - Work Order Release								
QC	Memo	0.00							
Quality Control									

11/7/2011

CK 11/07/2011

11-0725

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Parent Item: D350-636-011

Parent Item Name: Skidtube LH



Start Date: 5/17/2011

Required Date: 6/2/2011

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev: I 02.09.25 Rearranged procedure steps KJ
 IPP Rev: J 06-03-23 As per Rev D JLM
 IPP Rev: K 06-07.13 As per dsi9343 EC
 IPP Rev: L 07-07-28 Added SS Wearplates(Rev E) JLM Verf: EC
 IPP Rev: M 08-04-22 update steps 4, 13 DD verified by: EC
 IPP Rev: N 08-09-23 revF as per dwg DD verified by: ec
 IPP Rev: O 09-02-06 apply antiseize on AN8C21A bolts as per PAR09-010
 DD verf: EC IPP Rev: P 10.06.22 revise
 seq110 DD verf: EC IPP Rev: Q 10.10.01 as per IIN revH
 DD verf: EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D2594-3 		Manufactured	No			230	Each	1,020.000	8	8			PTO
O-Ring, 205 Skidtube													HL 11/07/20 NOT applicable
				<u>Location</u>				<u>Loc Qty</u>		<u>Loc Code</u>			
				FP-A				1020					
					65518			70					
					66952			950					
D3492-1 		Manufactured	No			230	Each	0.0000	8	8			
Plug								B70684					(x8) HL 11/07/20
D3492-3 		Manufactured	No			230	Each	0.0000	8	8			
Plug								B70692					(x8) HL 11/07/20

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
11/07/20	230	D2594-3 "O" ring are replace by NAS1611-010 "O" rings PERMANENT CHANGE	JL E	11/07/20 11/07/20	x2		

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Parent Item Name: Skidtube LH

Start Date: 5/17/2011

Required Date: 6/2/2011

Start Qty: 1.00

Required Qty: 1.00

NAS1611-010

Purchased

No

230

Each

266.0000

8

8



O-RING

Location

Loc Qty

Loc Code

FP

80

117460

80

FP-A

186

110915

139

115589

47

11/07/20

AN960JD816

Purchased

No

250

Each

43.0000

2

2



1/2" washer, Alum

Location

Loc Qty

Loc Code

FP-A

43

106043

43

NAS114008631
M110070

D2744

Manufactured

No

110

Each

31.0000

1

1



Cap

Location

Loc Qty

Loc Code

LG002

31

62715

3

65086

28

8/6 4/06/23

D2600-3-BENT

Manufactured

No

110

Each

14.0000

1



Extrusion Bent

Location

Loc Qty

Loc Code

LG

14

66875

8

68137

6

11/06/20

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Start Date: 5/17/2011

Required Date: 6/2/2011

Start Qty: 1.00

Required Qty: 1.00

D2743 Manufactured No 160 Each 139.0000 8 8



Crossbolt Spacer

Location Loc Qty Loc Code

LG001 139
67766 75
68251 64



BR 11/06/30
B 69818 x 8

D2739 Manufactured No 160 Each 6.0000 1 1



350 I Beam

Location Loc Qty Loc Code

LG 69886 6
67785 1
68285 5



①

B 11/06/28

D3490-3 Manufactured No 160 Each 42.0000 4 4



Cross Bolt Spacer

Location Loc Qty Loc Code

LG 26
68106 26
LG001 16
67774 16



BR 11/06/30
B 68952 x4

D3490-1 Manufactured No 160 Each 69.0000 4 4



Cross Bolt Spacer

Location Loc Qty Loc Code

LG 67
67773 11
68105 56
LG001 2
62450 2



BR 11/06/30
B 69510 x4

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Parent Item Name: Skidtube LH

Start Date: 5/17/2011

Required Date: 6/2/2011

Start Qty: 1.00

Required Qty: 1.00

ALS4-1032-225

Purchased

No

220

Each

1,685.000

38

38



Handwritten: 38 11/07/20

Insert

Location

Loc Qty

Loc Code

FP-B

4

110768

4

ST282

1681

110768

881

117717

800

Handwritten: X38

D3793-3

Manufactured

No

230

Each

30.0000

1

1



Handwritten: 1 11/07/20

Wearshoe

Location

Loc Qty

Loc Code

FP018

21

68356

13

69283

8

FP019

9

64447

9

Handwritten: X1

AN8C35A

Purchased

No

230

Each

69.0000

1

1



Handwritten: 1 11/07/20

BOLT

Location

Loc Qty

Loc Code

FP

40

117511

40

FP-A

29

115960

6

116874

23

Handwritten: X1

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 5

Work Order ID: 69707

Parent Item: D350-636-011

Parent Item Name: Skidtube LH



Start Date: 5/17/2011

Required Date: 6/2/2011

Start Qty: 1.00

Required Qty: 1.00

D3793-1 Manufactured No

230 Each

31.0000

1

1



Wearshoe

Location

Loc Qty

Loc Code

FP018

31

64445

14

69285

17

D3488-041 Manufactured No

230 Each

9.0000

1

1



Blade Fitting Assembly, LH

Location

Loc Qty

Loc Code

FP007

1

61689

1

FP008

8

62002

2

67788

6

1369903

D3794-3 Manufactured No

230 Each

34.0000

1

1



Gasket

Location

Loc Qty

Loc Code

FP010

26

68357

26

FP018

8

39422

1

61712

7

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Page 5

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 6

Work Order ID: 69707

Parent Item: D350-636-011

Parent Item Name: Skidtube LH



Start Date: 5/17/2011

Required Date: 6/2/2011

Start Qty: 1.00

Required Qty: 1.00

AN6C44A Purchased No 230 Each 82.0000 4 4
BOLT
1107/20

Location	Loc Qty	Loc Code
FG	2	1117950
103964	2	
ST344	80	
117407	80	

MS21083C8 Purchased No 230 Each 113.0000 1 1
NUT
1107/20

Location	Loc Qty	Loc Code
FP-B	1	
115884	1	
ST303	112	
115884	0	
117291	37	
117423	50	
117677	25	

D3536-25 Manufactured No 230 Each 34.0000 1 1
Gasket
1107/20

Location	Loc Qty	Loc Code
FP012	34	
65903	8	
68351	26	

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Shop Packet Print

Page 6

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 7

Work Order ID: 69707

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

Start Date: 5/17/2011

Required Date: 6/2/2011

Start Qty: 1.00

Required Qty: 1.00

D3631-1	Manufactured	No	230	Each	500.0000	8	8
							<u>HL 1107120</u>



Washer

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
ST072	500	
68062	500	


D3791-1	Manufactured	No	230	Each	19.0000	1	1
							<u>HL 1107120</u>

Wearplate

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP017	19	B69744
62239	7	
68352	12	

AN960C10L	<u>NAS1149C0332</u>	Purchased	No	230	Each	0.0000	38	38
	R-						<u>(x38) HL 1107120</u>	

washer

D2745	Manufactured	No	230	Each	206.0000	8	8
							<u>HL 1107120</u>

Bushing

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP-A	206	
67764	5	
68248	201	B69816

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Page 7

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 8

Work Order ID: 69707

Parent Item: D350-636-011



Parent Item Name: Skidtube LH

Start Date: 5/17/2011

Required Date: 6/2/2011



Start Qty: 1.00

Required Qty: 1.00

AN3C5A Purchased No 230 Each 1,290.000 34 34
  all 11/07/20



Bolt

Location	Loc Qty	Loc Code
FP-A	7	M117872
115835	7	X34
ST350	1283	
115422	49	
116419	334	
116549	100	
117343	500	
117508	300	

D3537-1 Manufactured No 230 Each 35.0000 3 3
  all 11/07/20

Wearpad

Location	Loc Qty	Loc Code
FP017	35	B70686
63313	2	X3
66804	29	
66935	4	

AN960C816L Purchased No 230 Each 0.0000 1 1
 XNAS1149C0832R M114915  (x1) all 11/07/20

WASHER

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 9

Work Order ID: 69707

Parent Item: D350-636-011

Parent Item Name: Skidtube LH



Start Date: 5/17/2011

Required Date: 6/2/2011

Start Qty: 1.00

Required Qty: 1.00

AN3C6A
BOLT

Purchased No

230 Each

422.0000 4 4



11/07/20

Location

Loc Qty

Loc Code

FP-A

1

111982

1

ST351

421

111982

2

116419

23

116549

50

116704

96

117514

100

117619

50

117688

100

84

NAS1611-013

Purchased No

230 Each

168.0000 8 8



11/07/20

O-RING

Location

Loc Qty

Loc Code

FP

163

117291

123

117460

40

1117887

88

FP-A

5

116582

5

D3535-25

Manufactured No

230 Each

30.0000 1 1



11/07/20

Wearshoe

Location

Loc Qty

Loc Code

FP018

30

62233

1

65167

3

68353

11

69284

15

11

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Page 9

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 10

Work Order ID: 69707

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

Start Date: 5/17/2011

Required Date: 6/2/2011

Start Qty: 1.00

Required Qty: 1.00

D3794-1

Manufactured No

230

Each

32.0000

1

1



Gasket



11/09/20

Location

Loc Qty

Loc Code

FP010

32

39421

1

61704

5

68355

26

MS21043-6

Purchased No

230

Each

523.0000

4

4



NUT



11/07/20

Location

Loc Qty

Loc Code

FG

20

103693

20

FP-A

40

112314

40

ST301

463

112314

463

D3493-1

Manufactured No

250

Each

31.0000

2

2



Washer



3608253 11/7/21

Location

Loc Qty

Loc Code

ST062

31

66975

31

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 11

Work Order ID: 69707

Parent Item: D350-636-011

Parent Item Name: Skidtube LH



Start Date: 5/17/2011

Required Date: 6/2/2011

Start Qty: 1.00

Required Qty: 1.00

MS21083C8

Purchased

No

250

Each

113.0000

2



NUT

Location

Loc Qty

Loc Code

FP-B

1

115884

1

ST303

112

115884

0

117291

37

117423

50

117677

25



2
5

AN8C21A

Purchased

No

250

Each

76.0000

2



BOLT

Location

Loc Qty

Loc Code

ST345

76

116381

26

117562

50



2
117677

NAS1515H3L

Purchased

No

230

Each

276.0000

8



WASHER

Location

Loc Qty

Loc Code

FG

40

102472

40

ST277

236

113362

236



2
84
1107120

X 4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 12

Work Order ID: 69707

Parent Item: D350-636-011

Parent Item Name: Skidtube LH



Start Date: 5/17/2011

Required Date: 6/2/2011

Start Qty: 1.00

Required Qty: 1.00

D2741

Manufactured No

250 Each

44.0000

1

1



Blade, 350 Skidtube



3691338

Location

Loc Qty

Loc Code

ST466

44

61341

6

63589

38

D3532-1

Manufactured No

250 Each

13.0000

2

2



Spacer



36895 1171218

Location

Loc Qty

Loc Code

ST065

13

62218

13

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Shop Packet Print

Page 12

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

QTY -041	QTY -042	QTY -043	QTY -044	PART NUMBER	DESCRIPTION
X				D2750-041	350 SKIDTUBE ASSEMBLY, LH
	X			D2750-042	350 SKIDTUBE ASSEMBLY, RH
		X		D2750-043	350 SKIDTUBE ASSEMBLY, LH
			X	D2750-044	350 SKIDTUBE ASSEMBLY, RH
1	1	1	1	D2739	WEB
8	8	8	8	D2743	SPACER
1	1	1	1	D2744	CAP
8	8	8	8	D2745	BUSHING
1				D2750-1	SKIDTUBE WELDMENT, LH
	1			D2750-2	SKIDTUBE WELDMENT, RH
		1		D2750-3	SKIDTUBE WELDMENT, LH
			1	D2750-4	SKIDTUBE WELDMENT, RH
1		1		D3488-041	BLADE FITTING, LH
	1		1	D3488-042	BLADE FITTING, RH
4	4	4	4	D3490-1	SPACER
4	4			D3490-3	SPACER
		4	4	D3490-5	SPACER
8	8	8	8	D3492-041	PLUG ASSEMBLY
8	8			D3492-043	PLUG ASSEMBLY
		8	8	D3492-045	PLUG ASSEMBLY
1	1	1	1	D3535-25	WEARSHOE
1	1	1	1	D3536-25	GASKET
3	3	3	3	D3537-1	WEARPAD
8	8	8	8	D3631-1	WASHER
1	1	1	1	D3791-1	WEARPLATE
1	1	1	1	D3793-1	WEARSHOE
1	1	1	1	D3793-3	WEARSHOE
1	1	1	1	D3794-1	GASKET
1	1	1	1	D3794-3	GASKET
38	38	38	38	ALS4-1032-225	INSERT (OR ALS7-1032-225, AKS4-1032-225, AELS-1032-225)
34	34	34	34	AN3C5A	BOLT
4	4	4	4	AN3C6A	BOLT
4	4	4	4	AN6C44A	BOLT
1	1	1	1	AN8C35A	BOLT
38	38	38	38	AN960C10L	WASHER
1	1	1	1	AN960C816L	WASHER
4	4	4	4	MS21043-6	NUT
1	1	1	1	MS21083C8	NUT
4	4	4	4	NAS1515H3L	WASHER

GENERAL NOTES:

- MATERIAL: MAKE D2750-1/-2/-3/-4 FROM D2600-3 EXTRUSION (INITIAL LENGTH = 120.0).
- FINISH:
ACID ETCH, ALONDE ASSEMBLY PER DART QSI 005 4.1 PRIOR TO INSTALLING D2739 WEB.
POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED TO 1.0 ABOVE SKIDTUBE CENTER-LINE PER DART 005 4.4 (OPTIONAL).
- TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- UNITS: INCHES UNLESS OTHERWISE NOTED
- BREAK SHARP EDGES: N/A
- IDENTIFICATION: N/A
- WEIGHT: D2750-041/-042/-043/-044 = 26.5 LBS
- WELD PER DART QSI 004
- INSTALL ALS4-1032-225 INSERTS AFTER FINISH AS INDICATED. DRILL 'F' SIZE HOLES ($\phi 0.297$) FOR WEARSHOE INSERTS
- FINAL CONFIGURATION SHOULD HAVE THE FOLLOWING MINIMUM MECHANICAL PROPERTIES:
MINIMUM YIELD TENSILE STRENGTH = 35 KSI
MINIMUM ULTIMATE TENSILE STRENGTH = 38 KSI
- SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS.
COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF
POWDER COATING WITH MEK DEGREASER.
- SPACER AND PLUG INSTALLED SAME AS SECTION AJ-AJ EXCEPT HORIZONTAL
- SPACER AND PLUG INSTALLED SAME AS SECTION AP-AP EXCEPT HORIZONTAL

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 69707

11-05-17
RELEASED

F	INCORPORATE DSI 9413; QTY (3) D3537-1 WAS QTY (5) (ZN C8-1); D3791-1/-3 REPLACES D3535-13/-35 (ZN C8-1); D3794-1/-3 REPLACES D3536-13/-35 (ZN B8-1); ADD D3791-1 (ZN C8-1); WEARSHOE HOLES UNDER FWD/AFT SADDLE REMOVED (8 PL). WEARSHOE HARDWARE QTY UPDATED (ZN B8-1); D3488-041/-042 HARDWARE UPDATED (ZN C1-8, 9, 10, 11); ADD NOTE 12 AND 13 (ZN AG-1); REASON: REF. NCR 08-043	PH	08.07.16
E	CHANGE TO STAINLESS STEEL WEARPLATES; ADD RUBBER GASKETS, CHANGE INSERTS; ADD D3631-1; REMOVE QTY (38) NAS1515H3L; REMOVE QTY (10) NAS1515H8L; REMOVE D2741; QTY (2) AN960C816; REMOVE QTY (2) MS21083C8	CB	07.05.17
D	ADD HOLES AND SPACERS FOR APICAL FLOATS; INCORPORATE DEC 9133/9157	PH	06.01.05
C	ADD D2750-3/D2750-4; INCORPORATE D2738 AND D2740	CP	98.11.18
B	CHANGE MS24694-S293 TO AN8-16A	CP	98.09.01
A	NEW ISSUE	DS	98.04.16
REV	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	08.07.16		

DART AEROSPACE USA, INC.

PORT HADLOCK, WA

DRAWING NO.

D2750

REV. F

SHEET 1 OF 11

TITLE

350 SKIDTUBE ASSEMBLY

SCALE

NTS

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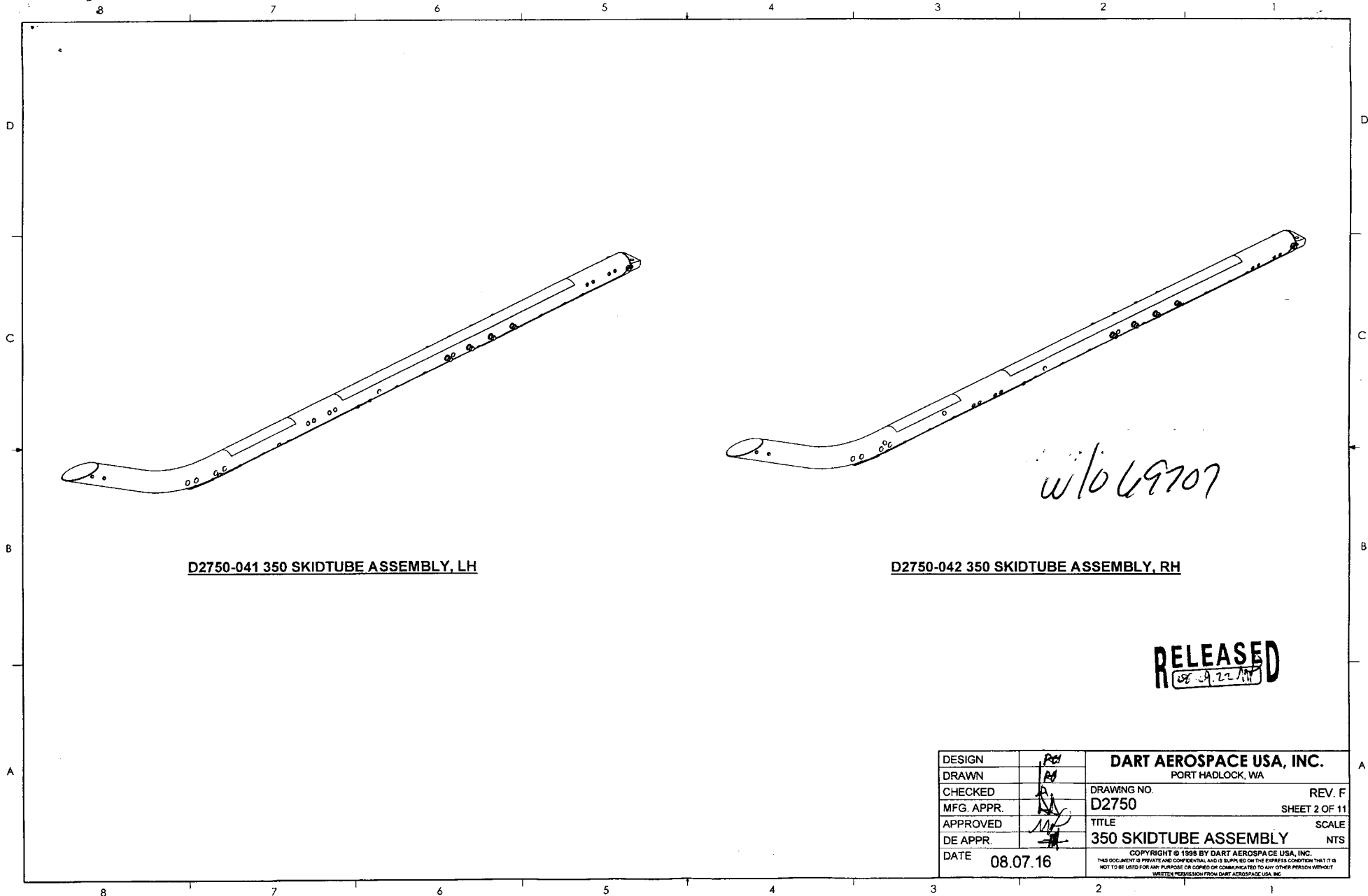
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC-Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



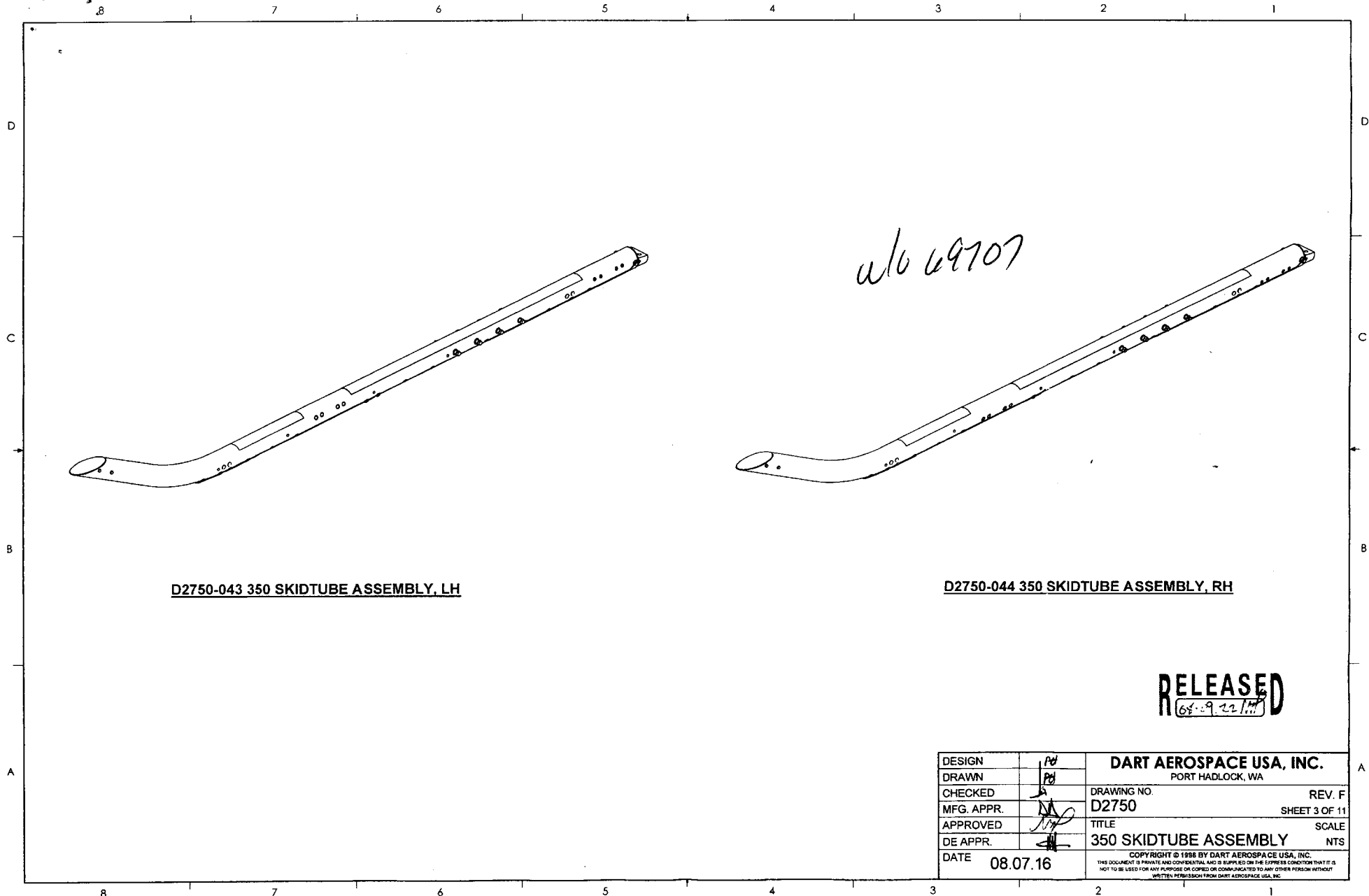
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



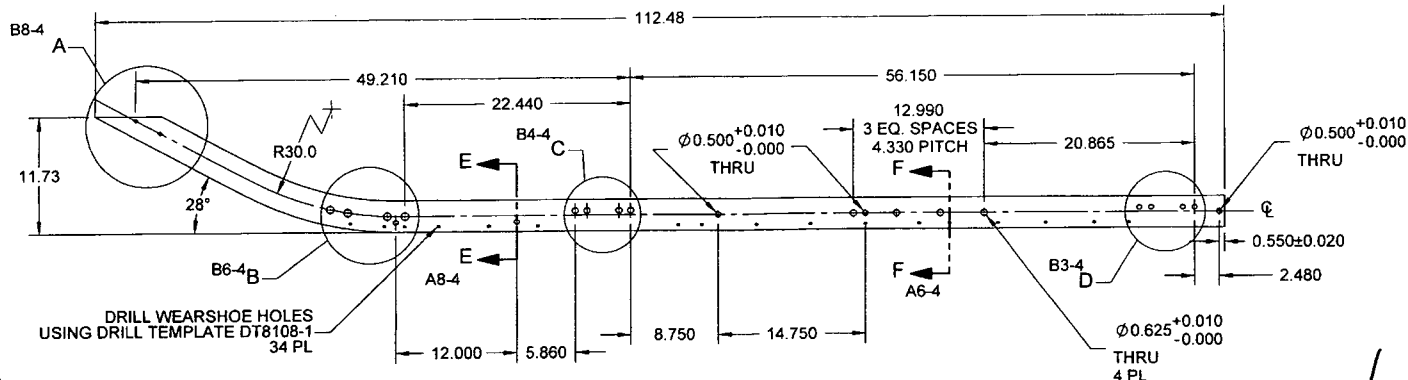
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

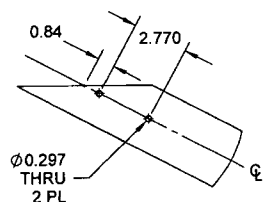
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

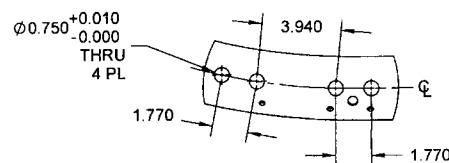


D2750-1 LH SKIDTUBE

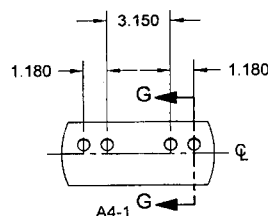
u/b 69707



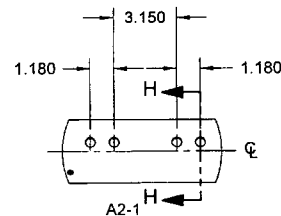
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SCALE 2X



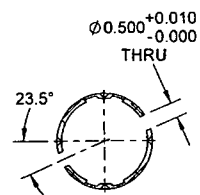
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SCALE 2X



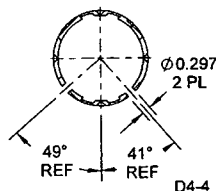
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SCALE 2X



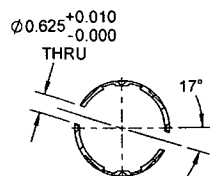
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SCALE 2X



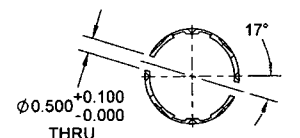
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SCALE 3X, 2 PL



SECTION F-F
SCALE 3X, 17 PL



SECTION G-G
SCALE 3X, 4 PL



SECTION H-H
SCALE 3X, 4 PL

RELEASED

DESIGN	IPN	DART AEROSPACE USA, INC.	
DRAWN	IPN	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. F
MFG. APPR.		D2750	SHEET 4 OF 11
APPROVED		TITLE	SCALE
DE APPR.		350 SKIDTUBE ASSEMBLY	NTS
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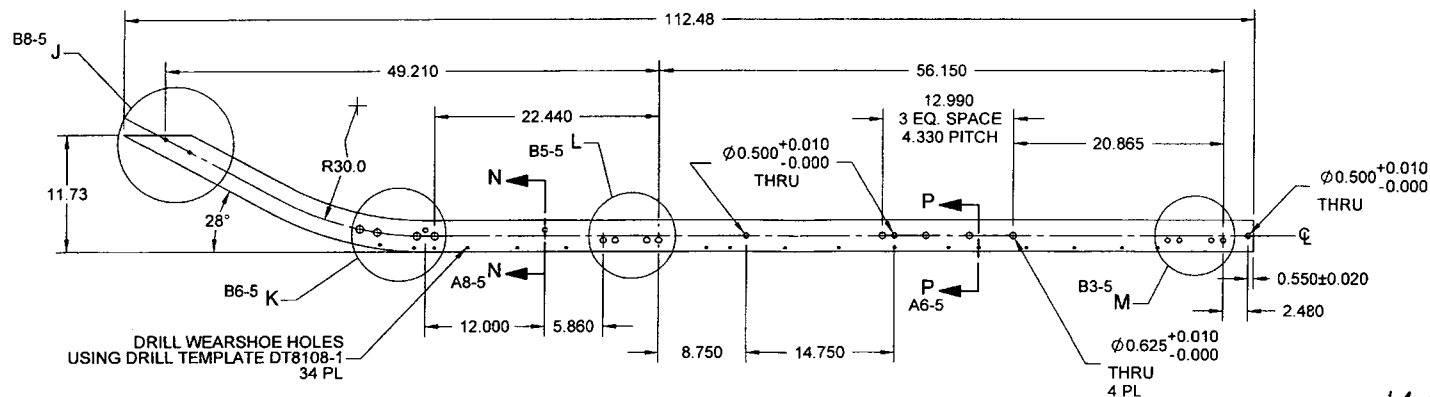
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

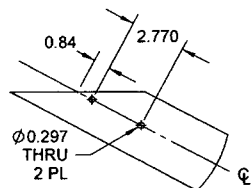
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

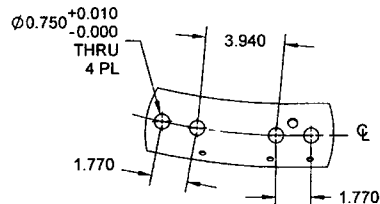


D2750-2 RH SKIDTUBE

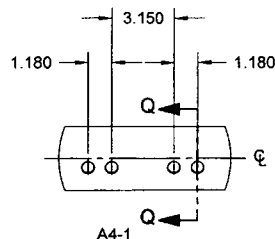
W/O 69107



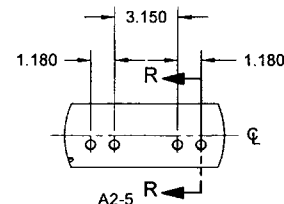
DETAIL J
SCALE 2X



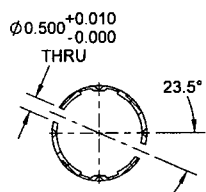
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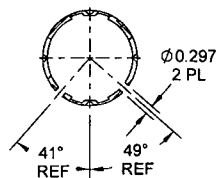
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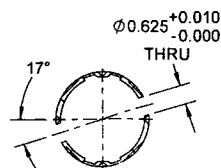
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SCALE 2X



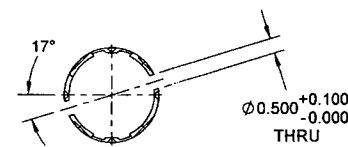
SECTION N-N
SCALE 3X, 2 PL



SECTION P-P
SCALE 3X, 17 PL



SECTION Q-Q
SCALE 3X, 4 PL



SECTION R-R
SCALE 3X, 4 PL

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DESIGN	REV	DART AEROSPACE USA, INC.	
DRAWN	REV	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. F
MFG. APPR.		D2750	SHEET 5 OF 11
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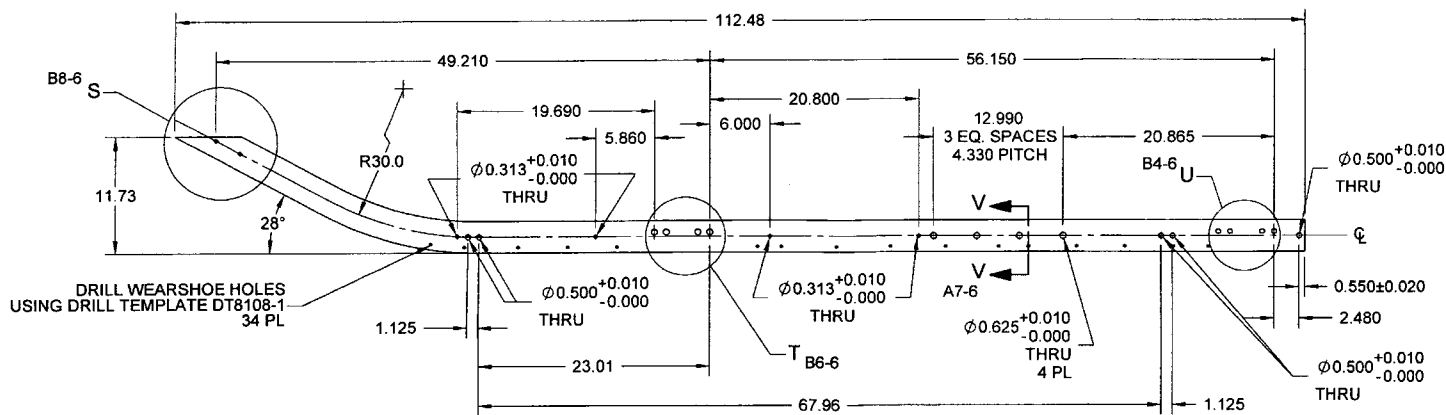
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

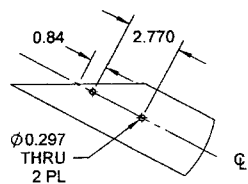
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

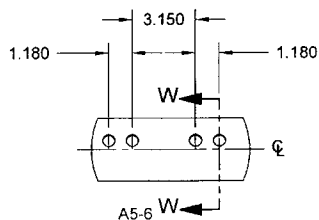
NOTE: Date & initial all entries



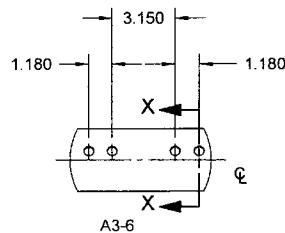
D2750-3 LH SKIDTUBE



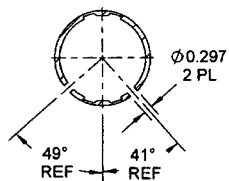
DETAIL S
SCALE 2X



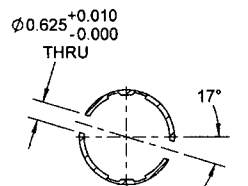
DETAIL T
SCALE 2X



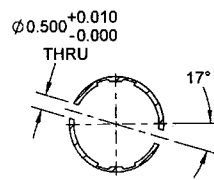
DETAIL U
SCALE 2X



SECTION V-V
SCALE 3X, 17 PL



SECTION W-W
SCALE 3X, 4 PL



SECTION X-X
SCALE 3X, 4 PL

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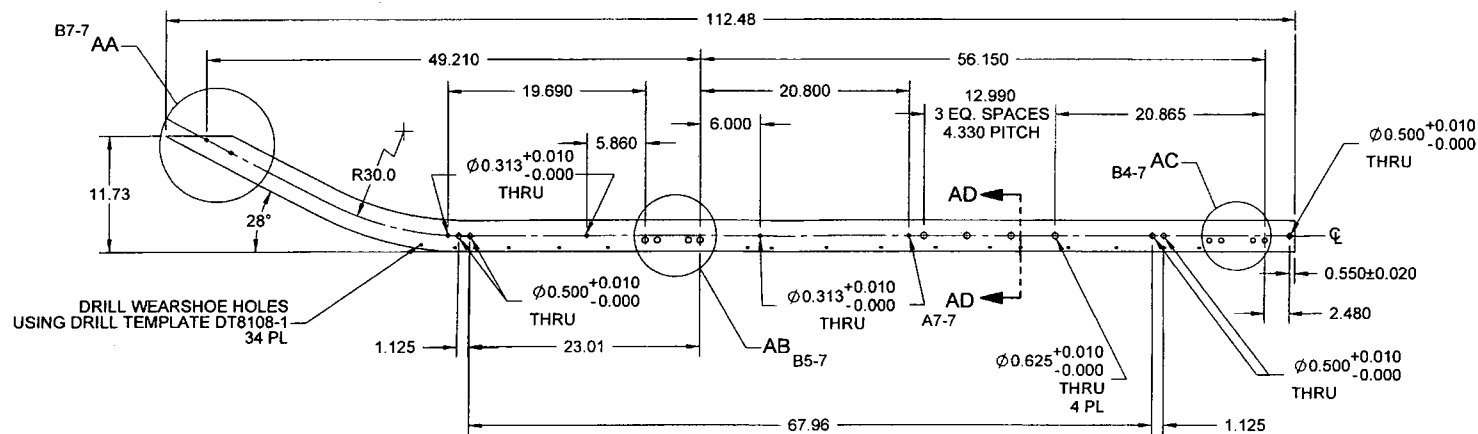
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

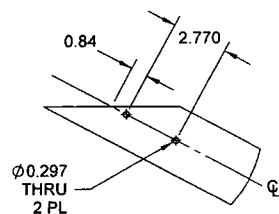
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NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

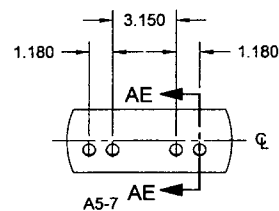
NOTE: Date & initial all entries



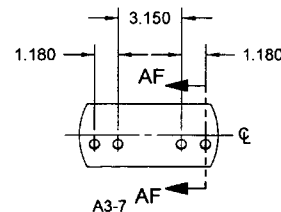
D2750-4 RH SKIDTUBE



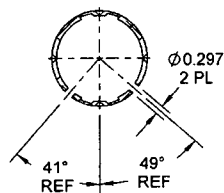
DETAIL AA
SCALE 2X



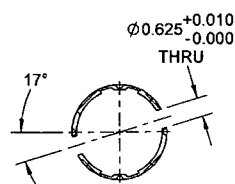
DETAIL AB
SCALE 2X



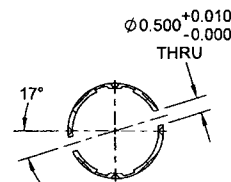
DETAIL AC
SCALE 2X



SECTION AD-AD
SCALE 3X, 17 PL



SECTION AE-AE
SCALE 3X, 4 PL



SECTION AF-AF
SCALE 3X, 4 PL

26 69707

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06-04-22-716

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MFG. APPR.	PA	D2750	SHEET 7 OF 11
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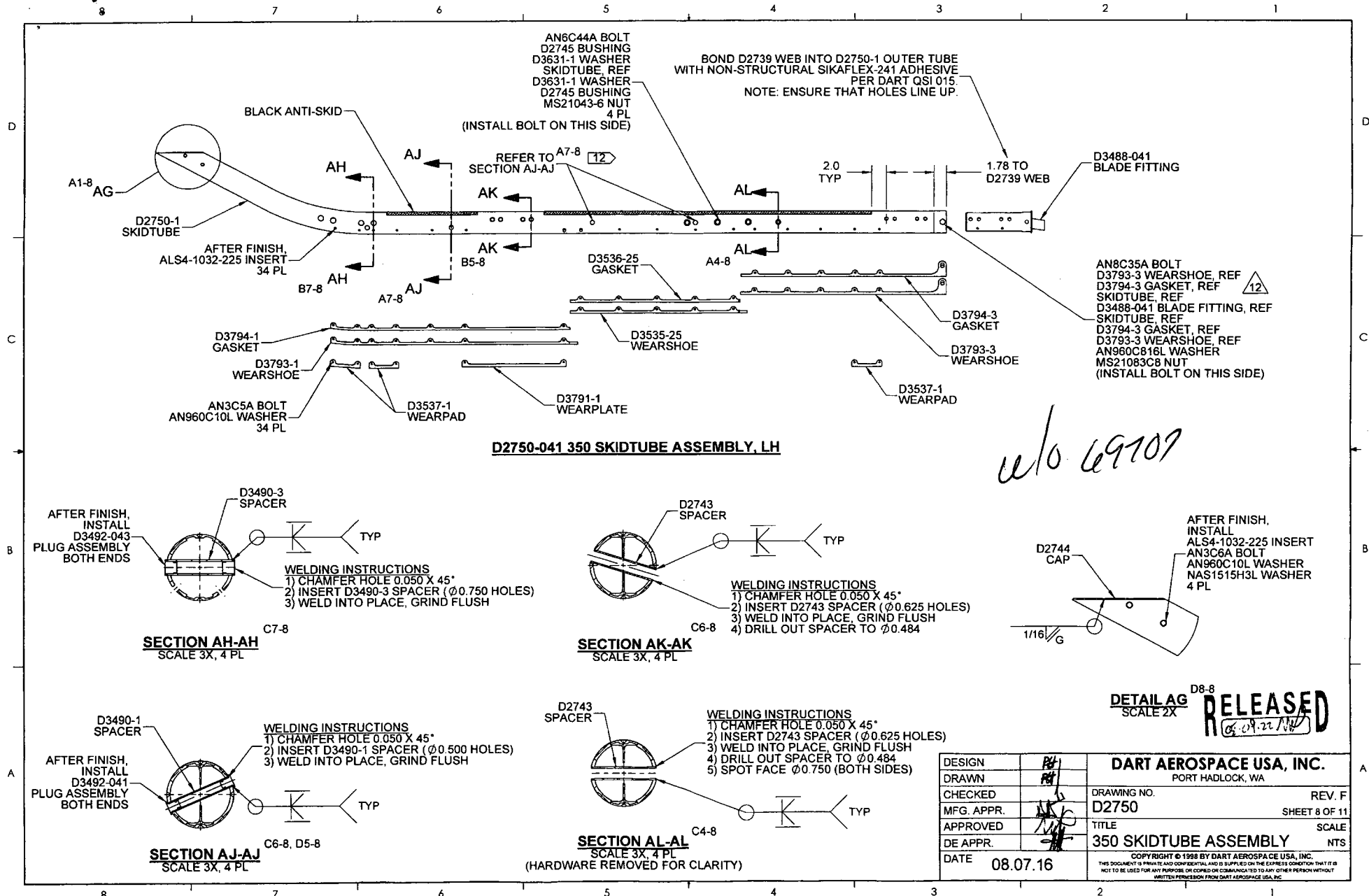
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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C

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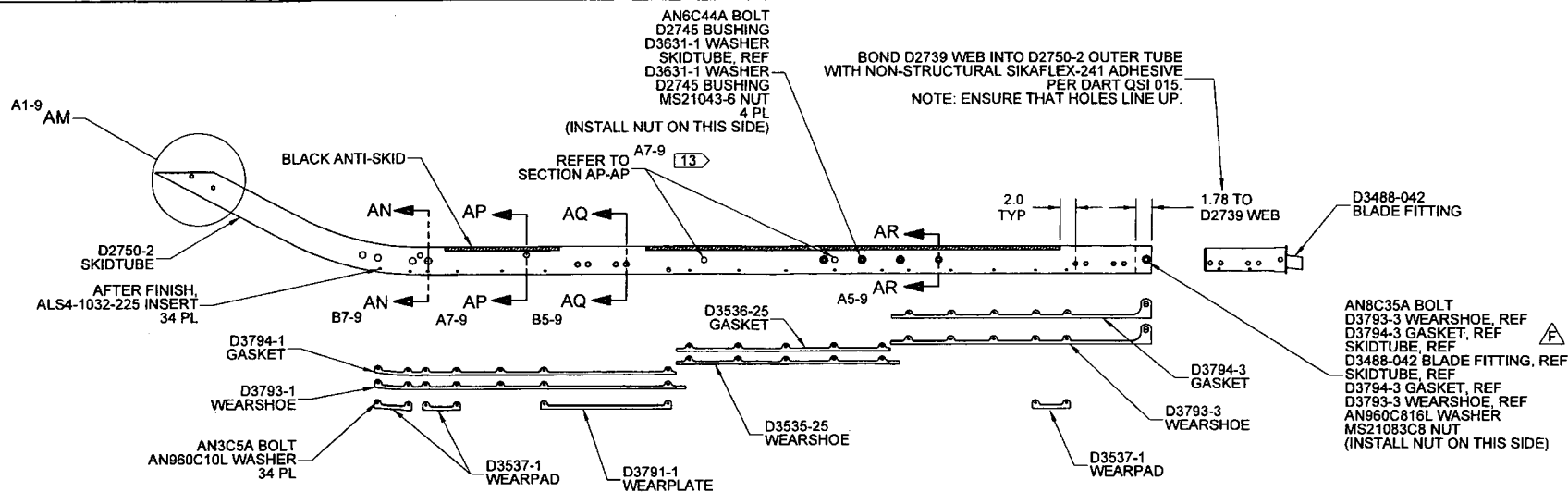
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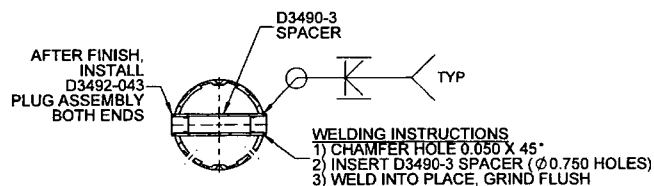
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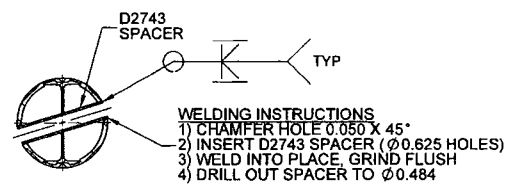


D2750-042 350 SKIDTUBE ASSEMBLY, RH

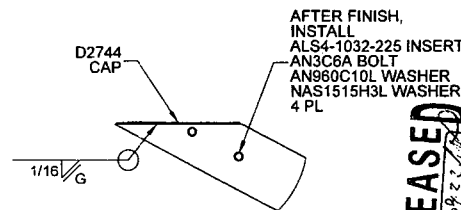
u/b 69707



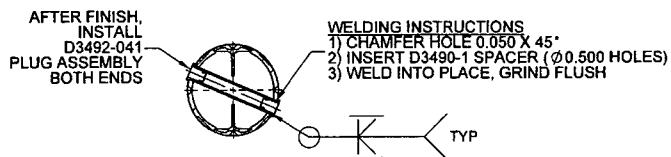
SECTION AN-AN SCALE 3X, 4 PL



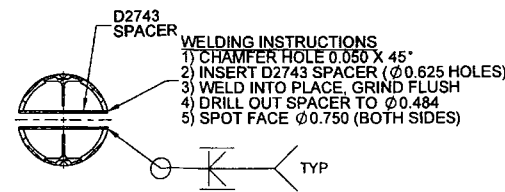
SECTION AQ-AQ SCALE 3X, 4 PL



DETAIL AM SCALE 2X



SECTION AP-AP SCALE 3X, 4 PL



SECTION AR-AR SCALE 3X, 4 PL (HARDWARE REMOVED FOR CLARITY)

DESIGN	PA	DART AEROSPACE USA, INC.	
DRAWN	PA	PORT HADLOCK, WA	
CHECKED	PA	DRAWING NO.	REV. F
MFG. APPR.	MD	D2750	SHEET 9 OF 11
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08-09-22-16

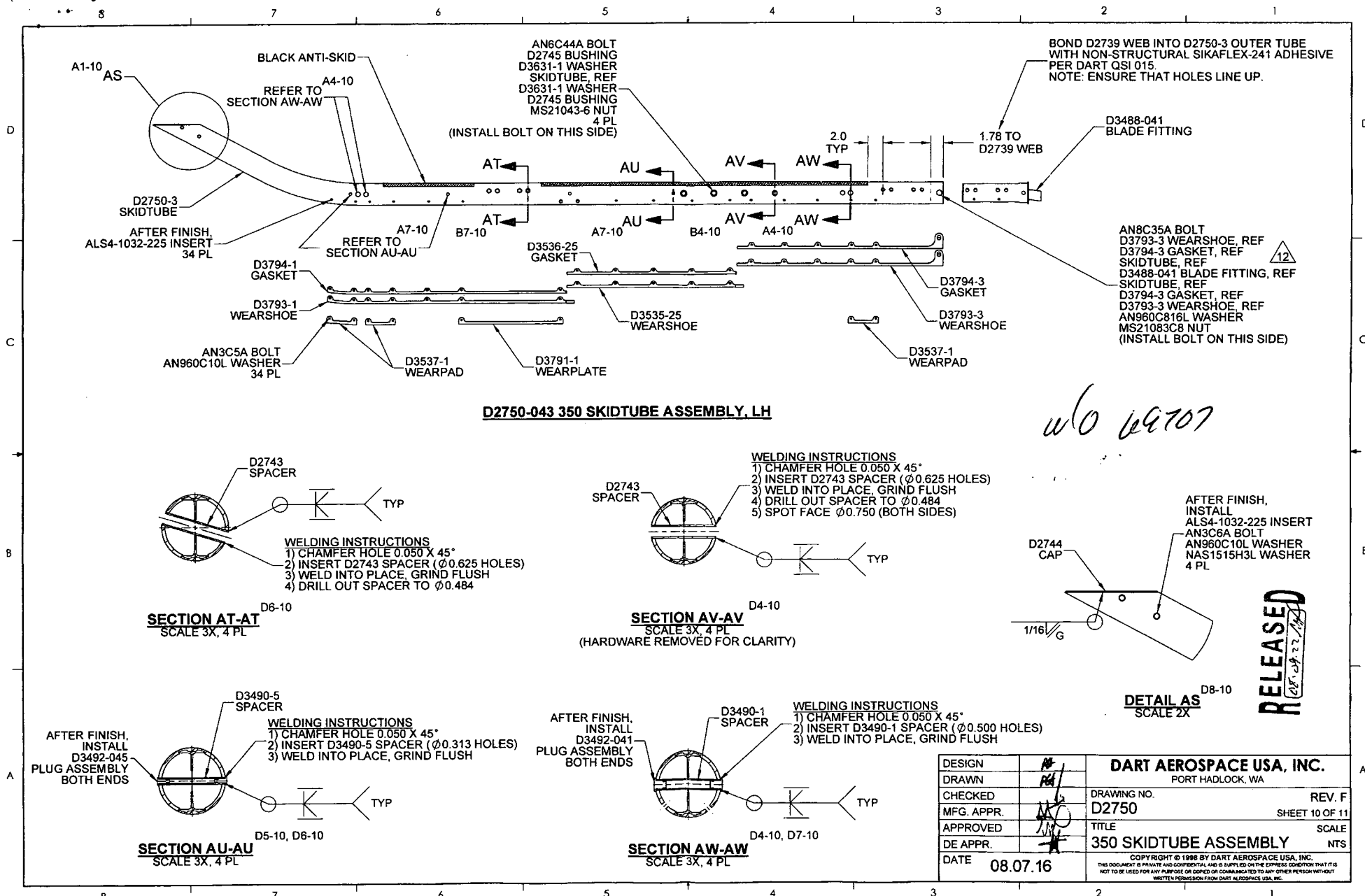
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



DESIGN	AD	DART AEROSPACE USA, INC.	
DRAWN	AD	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. F
MFG. APPR.	AD	D2750	SHEET 10 OF 11
APPROVED		TITLE	SCALE
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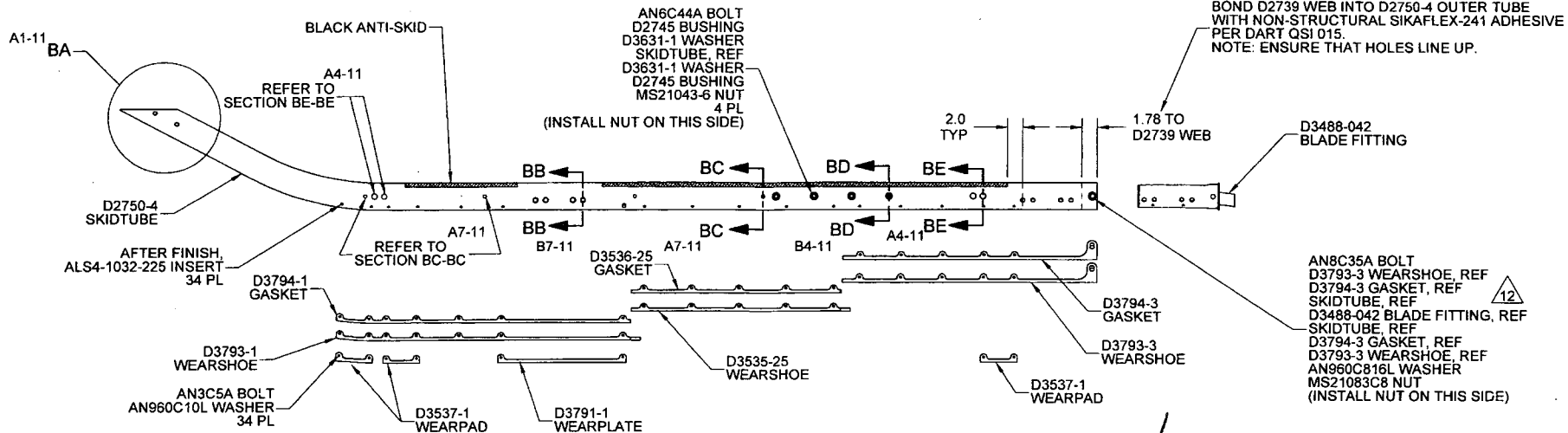
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

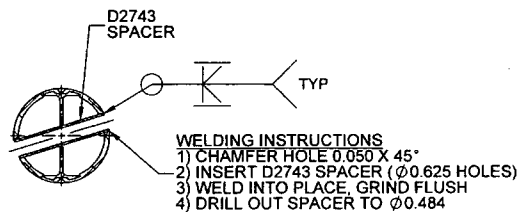
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

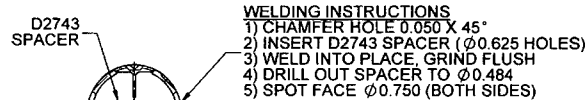
NOTE: Date & initial all entries



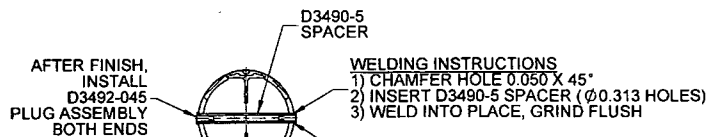
D2750-044 350 SKIDTUBE ASSEMBLY, RH



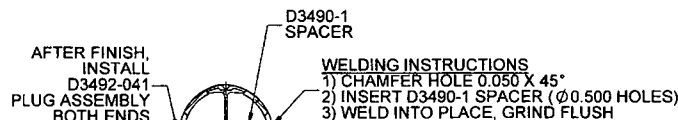
SECTION BB-BB SCALE 3X, 4 PL



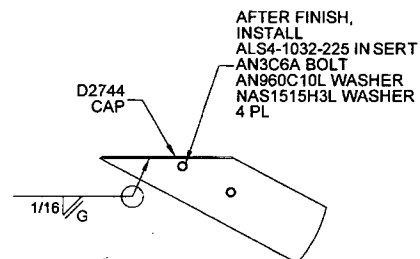
SECTION BD-BD SCALE 3X, 4 PL (HARDWARE REMOVED FOR CLARITY)



SECTION BC-BC SCALE 3X, 4 PL



SECTION BE-BE SCALE 3X, 4 PL



DETAIL BA SCALE 2X

DESIGN	HA	DART AEROSPACE USA, INC.	
DRAWN	HA	PORT HADLOCK, WA	
CHECKED	HA	DRAWING NO.	REV. F
MFG. APPR.	HA	D2750	SHEET 11 OF 11
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

NO. 260

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barclay Elliott
Job number: B.694707
Part number: J350 - 636 - 011
Description: 350
Welding Process: Tig[☒] Mig[]
Base material: Aluminum
Current: AC[☒] DC[]

TEST REQUIREMENTS AND RESULTS

Visual: pass[☒] fail[]
Penetration: pass[☒] fail[]

UNACCEPTABLE

Cracks: pass[☒] fail[]
Undercut: pass[☒] fail[]
Pin holes: pass[☒] fail[]
Overlap (cold lap): pass[☒] fail[]
Porosity (surface): pass[☒] fail[]
Coloration: pass[☒] fail[]

Qualifier Pat Dunn Date of Test Coupon 11-07-08
Welder Barclay Elliott Date of Test Coupon 11-07-08

The above named individual is qualified in accordance with AWS D17.1.2001 to weld